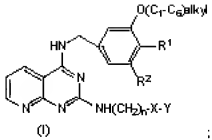
CLAIMS

1. A compound of formula (I)



(I) ;

the prodrugs thereof, and the pharmaceutically acceptable salts of said compounds or prodrugs, wherein:

R^1 and R^2 are hydrogen or methoxy, provided R^1 and R^2 are not both hydrogen or both methoxy;

n is 1, 2, 3, or 4;

X is a bond; O; S; C=O; -N(R)-, wherein R is hydrogen or -(C_1-C_3)alkyl; -C(OH)-; or -SO_2; and

Y is benzoxazolyl; benzothiazolyl; benzofurazanyl; benzofuranyl; benzothiadiazolyl; benzisoxazolyl; benzisothiazolyl; benzimidazolyl; pyridyl; isatinyl; oxindolyl; indazolyl; indolyl; phenyl; thienyl; or furanyl; wherein Y is optionally substituted independently with from one to three halogen; trifluoromethyl; methoxy; -C(=O)CH_3; cyano; -C(CH_3)$_2$OH; -CH(CH_3)OH; -CH(CF_3)OH; -C(C=O)CF_3; -SO_2NH_2; -C(=O)OCH_3; -CH_2COOH;  ; thiazolyl; or oxadiazolyl.

2. A compound of claim 1, wherein X is a bond, and Y is benzofurazanyl; thienyl; pyridyl; or phenyl, wherein phenyl is optionally substituted independently with one or two halogen; trifluoromethyl; methoxy; -C(=O)CH_3; cyano; -C(CH_3)$_2$OH; -CH(CH_3)OH; -CH(CF_3)OH; -C(C=O)CF_3; -SO_2NH_2; -C(=O)OCH_3; -CH_2COOH; thiazolyl; or oxadiazolyl.

3. A compound of claim 1 or 2, wherein X is a bond, n is 2 or 3, and Y is thienyl; pyridyl; or phenyl, wherein phenyl is optionally substituted independently with one or two methoxy; halogen; -$C(CH_3)_2OH$; $CH(CF_3)OH$; or -$C(C=O)CF_3$.

4. N^2,N^4-*bis*-(3,5-Dimethoxy-benzyl)-pyrido[2,3-d]pyrimidine-2,4-diamine;

N^4-(3,5-dimethoxy-benzyl)-N^2-(2-pyridin-4-yl-ethyl)-pyrido[2,3-d]pyrimidine-2,4-diamine;

N^4-(3,5-dimethoxy-benzyl)-N^2-(2-thiophen-2-yl-ethyl)-pyrido[2,3-d]pyrimidine-2,4-diamine;

N^4-(3,5-dimethoxy-benzyl)-N^2-2-phenethyl-pyrido[2,3-d]pyrimidine-2,4-diamine;

N^4-(3,5-dimethoxy-benzyl)-N^2-[2-(3,5-dimethoxy-phenyl)-ethyl]-pyrido[2,3-d]pyrimidine-2,4-diamine;

2-(3-{3-[4-(3,4-dimethoxy-benzylamino)-pyrido[2,3-d]pyrimidin-2-ylamino]-propyl}-phenyl)-propan-2-ol;

N^4-(3,4-dimethoxy-benzyl)-N^2-[2-(4-fluoro-phenyl)-ethyl]-pyrido[2,3-d]pyrimidine-2,4-diamine;

N^4-(3,4-dimethoxy-benzyl)-N^2-phenethyl-pyrido[2,3-d]pyrimidine-2,4-diamine; or

N^4-(3,4-dimethoxy-benzyl)-N^2-(3-phenyl-propyl)-pyrido[2,3-d]pyrimidine-2,4-diamine; a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug.

5. A pharmaceutical composition comprising a compound of formula (I) of any of claims 1-4, a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug, and a pharmaceutically acceptable vehicle, carrier, or diluent.

6. A method of treating a PDE 2-mediated condition, disease, or symptom in a mammal in need of such treatment which method comprises administering to said mammal a therapeutically effective amount of a compound of formula (I) of any of claims 1-4, a prodrug thereof, or a pharmaceutically acceptable salt of said

compound or prodrug; or a pharmaceutical composition comprising said compound of formula (I), said prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug, and a pharmaceutically acceptable vehicle, carrier, or diluent.

7. A method of claim 6, wherein said condition, disease, or symptom is osteoporosis, pulmonary hypertension, female sexual arousal disorder, diminished memory or cognition, platelet aggregation, vascular angiogenesis, dementia, cancer, arrhythmia, thrombosis, bone fracture and/or defect, delayed or non-union fracture, spinal fusion, bone in-growth, cranial facial reconstruction, or hypoxia which method comprises administering to mammal in need of such treatment a therapeutically effective amount of a compound of formula (I) of claim 1, a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug; or a pharmaceutical composition comprising said compound, said prodrug thereof, or said pharmaceutically acceptable salt of said compound or prodrug.

8. A method of claim 6, wherein said condition is bone fracture and/or defect.

9. A pharmaceutical composition comprising a PDE 2 inhibitor, an EP_2 selective receptor agonist, and a pharmaceutically acceptable vehicle, carrier, or diluent.

10. A composition of claim 9, wherein said PDE 2 inhibitor is *N*^{4}-(3,5-dimethoxy-benzyl)-*N*^{2}-(2-pyridin-4-yl-ethyl)-pyrido[2,3-d]pyrimidin-2,4-diamine; 2-(3-{3-[4-(3,4-dimethoxy-benzylamino)-pyrido[2,3-d]pyrimidin-2-ylamino]-propyl}-phenyl)-propan-2-ol; *N*^{4}-(3,4-dimethoxy-benzyl)-*N*^{2}-(3-phenyl-propyl)-pyrido[2,3-d]pyrimidine-2,4-diamine; a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug.

11. A composition of claim 9 or 10, wherein said said EP_2 selective receptor agonist is (3-({[4-*tert*-butyl-benzyl)-(pyridine-3-sulfonyl)-amino)-methyl)-phenoxy)-acetic acid, a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug.

12. A method of any of claims 6-8, further comprising administering to said mammal a therapeutically effective amount of an EP_2 selective receptor agonist; or a pharmaceutical composition comprising a combination of said compound of formula (I) of claim 1 and said EP_2 selective receptor agonist.

13. A method of claim 12, wherein said PDE2 inhibitor is N^4-(3,5-dimethoxy-benzyl)-N^2-(2-pyridin-4-yl-ethyl)-pyrido[2,3-d]pyrimidin-2,4-diamine; 2-(3-{3-[4-(3,4-dimethoxy-benzylamino)-pyrido[2,3-d]pyrimidin-2-ylamino]-propyl}-phenyl)-propan-2-ol; N^4-(3,4-dimethoxy-benzyl)-N^2-(3-phenyl-propyl)-pyrido[2,3-d]pyrimidine-2,4-diamine; a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug.

14. A method of claim 12 or 13, wherein said EP_2 selective receptor agonist is (3-(((4-*tert*-butyl-benzyl)-(pyridine-3-sulfonyl)-amino)-methyl)-phenoxy)-acetic acid, a prodrug thereof, or a pharmaceutically acceptable salt of said compound or prodrug.

15. A method of treating bone fracture and/or defect in a mammal in need of such treatment which method comprises administering to said mammal a therapeutically effective amount of a PDE 2 inhibitor, a prodrug thereof, or a pharmaceutically acceptable salt of said inhibitor or prodrug.